

LOWER RAPID DITCH
(South Side Ditch)
Lower Rapid Valley Irrigation Ditches
On the South Side of Rapid Creek
Rapid City Vicinity
Pennington County
South Dakota

HAER No. SD-8

HAER
SD
52-RACI.V,
7-

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Denver, Colorado 80225-0287

HISTORIC AMERICAN ENGINEERING RECORD

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I. INTRODUCTION

Location: The Lower Rapid Ditch (South Side Ditch) is located on the south side of Rapid Creek in Pennington County, South Dakota, in the vicinity of Rapid City

Quad: Rapid City East and Box Elder

UTM: Zone 13
Diversión: 649200 E, 4878150 N
Upstream split: 650120 E, 4875770 N
Downstream merger: 654310 E, 4874640 N
Terminus: 656960 E, 4874520 N

Date of Construction: 1878, 1904

Present Owner: South Side Ditch and Water Company
c/o Bud Steen
Route 2 Box 607
Rapid City, South Dakota

Present Use: Irrigation

Significance: The Lower Rapid Ditch (South Side Ditch) is significant for its association with the development of irrigated agriculture in South Dakota. The ditch is a representative example of irrigation systems constructed, maintained, and operated by farmers.

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February 1994

II. HISTORY

The Lower Rapid Ditch (South Side Ditch) is located in the Lower Rapid Valley, just east of Rapid City, South Dakota. (See map on page 3). The ditch diverts water from Rapid Creek, a major tributary of the Cheyenne River, which flows through the valley. The valley is about 40 miles long, and from one to two miles wide. By 1878, farmers occupied the valley floor from Rapid City east for a distance of ten miles. These farmers, individually and in groups, began digging irrigation ditches from Rapid Creek to bring water to their crops. Over the next decade, most of the ditches became part of farmer-owned ditch corporations. The stockholders of these corporations worked together to expand, operate, and maintain the ditches. Of the 12 or so ditch companies that have operated in the Lower Rapid Valley, seven continue to provide water to about 9,000 acres. (See HAER No. SD-5 for a historical narrative of the Lower Rapid Valley irrigation ditches.) The Lower Rapid Ditch Company's ditch dates to the beginning of irrigated agriculture in the valley.

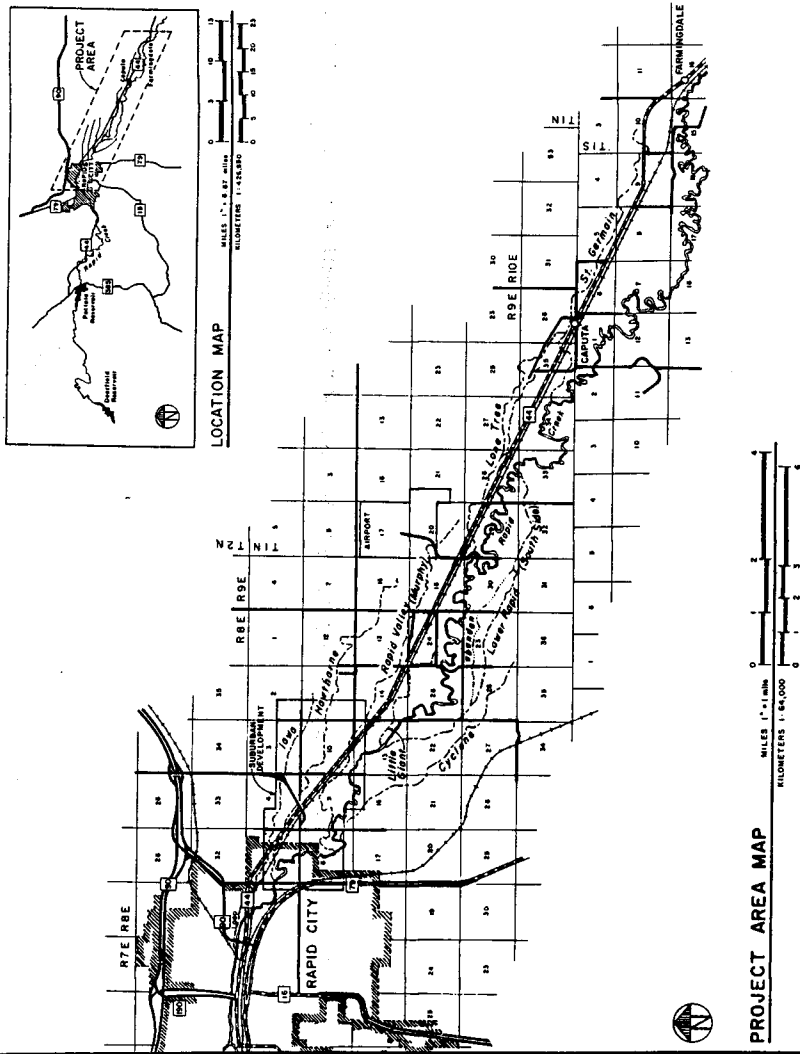
Little is known about the Lower Rapid Ditch Company other than it completed construction of at least a portion of its ditch in 1878.¹ The company's minute books have been lost or destroyed.

The South Side Ditch and Water Company was incorporated in 1901 to purchase the assets of the Lower Rapid Ditch Company. The sales price was \$12,000. The new corporation authorized \$12,000 of capital stock divided into 300 shares. The original directors were Eugene Holcomb, Anthony Thoma, and Leman Blair. Holcomb held 280 shares of stock; Thoma and Blair each held 10 shares.²

In April 1901, the stockholders selected Thoma to represent the company in a newly organized alliance of the South Side Ditch and Water Company, the Lone Tree Ditch Company, and the St. Germain Irrigating Company. The purpose of the alliance was "for mutual protection and to prevent if possible other ditch companies and persons from infringing upon the rights of the three companies."³

In 1902, the directors of the South Side Ditch and Water Company borrowed \$1000 for legal fees. The company sought a restraining order against the Rapid Valley Ditch Company to keep it "from infringing on the rights of the corporation." The expense of this action may have been the subject of dissension among the

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stockholders at their 1903 meeting. A motion to investigate the books of the treasurer failed, and a subsequent motion to table the treasurer's report also failed. A final motion to accept the treasurer's report passed. This, however, was followed by an amendment to the by-laws restricting the directors from incurring a debt greater than \$100 (except in the case of repairing or maintaining the ditch) without the approval of the stockholders.⁴

In 1904, the company retained the services of James Hartgering, an engineer, to investigate the condition of the ditch. Hartgering reported that several miles of the ditch had a fall of 16 feet to the mile which was at least ten feet too much. He found the ditch in "very bad condition." In places, the velocity of the water had eroded the ditch to depths of from four to eight feet deep and created a channel from 15 to 30 feet wide. One alternative he proposed was to install locks within the canal every quarter mile. He recommended, however, the construction of a new ditch to the south of the existing ditch with a fall not to exceed one-foot every 1000 feet (5½ feet per mile). Three farmers agreed to pay one-half the \$1493 construction cost; the remaining money was raised by a \$2.50 per share assessment. A year later, the stockholders deeded back the abandoned right-of-way to the owners of the property through which it passed.⁵

Consistent with the other ditch companies, most of the business of the corporation (beyond annual assessments and the election of directors) recorded in the minute books involved protection of the corporation's water rights. In 1912, the stockholders voted to consult an attorney over a disagreement with the St. Germain Irrigating Company and the Lone Tree Water Company.⁶ In 1916, it filed a protest against the Dakota Power Company's intention to appropriate water from Rapid Creek.⁷ And, in 1920, it voted to join with the Hawthorne Ditch Company in an appeal to the State Engineer. The two companies were seeking equal standing with the Murphy Ditch and the Rapid River Milling Company in a dispute over a plan by Homestake Mining Company to take water from North Rapid Creek for milling purposes.⁸

In 1938, the stockholders, apparently responding to a Bureau of Reclamation study of water storage, agreed that they would be willing to pay \$1 per acre/feet for up to 900 inches of additional water. They stated, however, that they would not support the issuance of bonds to fund a storage reservoir. The company also appointed a representative to discuss the feasibility of a storage dam with other Lower Rapid Valley irrigators.⁹

In 1937, the Bureau of Reclamation found that 1,465 irrigable acres could be served by the South Side Ditch, although water shortages limited actual acres irrigated to about one-half that number.¹⁰ In 1989, the South Side Ditch provided water to 1,014 acres.¹¹

III. PHYSICAL DESCRIPTION

The Lower Rapid Ditch (South Side Ditch) diverts water from the south side of Rapid Creek in the northeast quarter of Section 15, T1N, R8E, just to the south of U.S. Highway 40. Water flows from Rapid Creek into an intake channel.

The headgate structure was constructed in 1957. It consists of a 10-foot long concrete wall placed across the canal. A 5-foot extension of the wall angled to the northwest serves as the intake for the Little Giant Ditch (See HAER No. SD-13).

A pair of canal gates is mounted against the central portion of the headgate structure. They consist of rectangular gates in a welded angle iron frame. The gates are raised and lowered in the frame by a threaded stems and cast iron handwheels. Cast in the wheels is the maker's mark: THOMPSON P & S CO., DENVER. The single canal gate serving the Little Giant Ditch is similar in construction, but smaller in size.

Just below the headgate structure are the ruins of a wooden headgate structure. The exterior walls are constructed of six paired, in-line piles located at 5'-0" on center and three paired piles flaring toward the diversion channel. The piles placed at an angle are taller than those placed in-line and are presumably where the canal gate was located. The piles serve to hold a lining of 3" x 12" planks.

The Lower Rapid Ditch (South Side Ditch) below the headgate structure has a 10-foot wide, deep, and flat cross section. Excavated earth was thrown on the northeast side to create a berm with a 12-foot wide crest. After about one-third mile, the ditch is typically about 4-foot wide at the bottom and 2 to 3 feet deep.

The Lower Rapid Ditch (South Side Ditch) is 6 1/3 miles long. The diversion canal takes water from Rapid Creek at an elevation of about 3060 feet. The ditch then heads southerly through Sections 15 and 22, T1N, R8E. As it crosses the very

southwest corner of Section 23 and enters Section 26 it turns in an easterly direction. At this location, at an elevation of approximately 3050 feet, the canal splits. The 1904 canal takes a more southerly route through Sections 26 and 25 closer to the foothills; the abandoned canal is located to the north on the valley floor. The original route is again reached in Section 30, T1N, R9E at an elevation just below 3000 feet. The canal continues along the foothills until about the middle of the north half of Section 32 where it turns in a northeasterly direction. A wasteway returns excess water to Rapid Creek.

IV. FUTURE OF THE PROPERTY

The United States Department of Agriculture Water Quality Hydrologic Unit Area, Lower Rapid Creek Project, in Pennington County, South Dakota, was approved for funding by the Secretary of Agriculture in December of 1990. The Lower Rapid Ditch (South Side Ditch) may be affected as part of the project.

See HAER No. SD-5 for a full description of the undertaking.

V. ENDNOTES

1. *Black Hills Journal*, 11 May 1878.
2. South Dakota Secretary of State, "Articles of Incorporation of the South Side Ditch and Water Company," filed 10 January 1901, File No. DB-9701; South Side Ditch and Water Company, Minute Book, 12 January 1901.
3. South Side Ditch and Water Company, Minute Book, 1 April 1901.
4. *Ibid.*, 30 December 1902 and 2 March 1903.
5. *Ibid.*, 19 March 1904, 9 July 1904, and 24 March 1905.
6. *Ibid.*, 9 September 1912.
7. *Ibid.*, 29 October 1916.
8. *Ibid.*, 1 March 1920.
9. *Ibid.*, 7 March 1938.
10. U.S. Department of the Interior, Bureau of Reclamation, "Report on Rapid Valley Irrigation Project South Dakota," November 1937, 40. Copy in Library, Bureau of Reclamation, Newell, South Dakota.
11. U.S. Department of the Interior, Bureau of Reclamation, "Rapid Valley Water Management Study Appendix," Appendix J, July 1990. Copy in Soil Conservation Service office, Rapid City, South Dakota.

VI. SELECTED BIBLIOGRAPHIC CITATIONS

Black Hills Journal.

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